New Jersey Department of Environmental Protection
Site Remediation and Waste Management Program

CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION AREA (CEA/WRA) FACT SHEET FORM

Date Stamp
(For Department use only)

SECTION A. SITE INFORMATION

Site Name: AOC-19: QC Lab/AOC-90 drum Storage Area, Hess Corporation - Former Port Reading Complex (HC-PR)

Program Interest (PI) Number(s): 006148

Case Tracking Number(s) for this submission: E20130449

This form must be attached to the Cover / Certification Form if not submitted through the Remedial Phase Report Online Service

1. Indicate the reason for submission of this form *(see instructions)*:

☒ New CEA ☐ Revise CEA ☐ Reestablish CEA ☐ Existing CEA with no changes
☐ CEA for historic fill ☐ CEA for Historically Applied Pesticides (HAP) ☐ CEA lift/removal

If you are submitting this form for an existing CEA provide the CEA Subject Item ID: _____

2. Indicate the type of ground water Remedial Action (RA):

☒ Natural ☐ Active ☐ Final RA not yet selected

3. Is this form being submitted with a Remedial Action Permit (RAP) Form (for Soil or Ground Water)?.... ☒ Yes ☐ No

SECTION B. CEA COMPONENT AND VAPOR INTRUSION INFORMATION

Name of document that includes the CEA Fate and Transport Description: Exhibit D (attached)

Date of document: 05/12/2022

1. Ground Water Classification: What is the ground water classification within the CEA as per N.J.A.C. 7:9C?

(Check all that apply)

☐ Class I-A
☐ Class I-PL Pinelands Protection Area
☐ Class I-PL Pinelands Preservation Area
☒ Class II-A
☐ Class III-A
☐ Class III-B

2. Contaminant Data: This CEA/WRA applies only to the contaminants listed below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form instructions before entering data into the below table.

Contaminant	Concentration (1)	GWQS (2)	SWQS(3)	GWSL(4)
Benzene	1.8	1		
Arsenic	16.9	3		
Ammonia	8300	3000		
pH	12.92	6.5-8.5		

Notes:
(1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL) available at http://www.nj.gov/dep/srp/guidance/vaporintrusion/

☐ Check if attaching the form Addendum to list additional contaminants and associated information.

3. CEA Boundaries and VI Pathway Status: Year of tax map used: 2014

Are there volatile contaminants in the CEA? ☒ Yes ☐ No

Is there LNAPL currently found in the CEA? ☐ Yes ☒ No

For CEA revisions only:

☐ Check if CEA Boundary has changed (*See instructions*)

☐ Check if Block and Lot numbers have changed (*See instructions*)

List the block(s) and lot(s) included in the areal extent of the CEA and check the appropriate boxes:

Block	Lot(s)	Check if off-site	Check if VI pathway was evaluated*	Check if VI pathway status is indeterminate*
664.01	1.01	☐	☒	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

☐ Check if attaching an Addendum to list additional Blocks/Lots and associated information. *(see instructions)*

*Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and the status is indeterminate.

Direction of ground water flow: E-SE (*If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions.*)

Vertical depth of CEA: 15 (ft bgs) **and** 4 (msl).

Horizontal extent of CEA: 11402 Indicate units: ☐ acres or ☒ square feet

Name(s) of the affected Geologic Formation(s)/Unit(s) (*see instructions if multiple formations/units affected)*:

Rahway Till

Narrative description of proposed CEA boundaries:

A CEA of approximately 11,402 square feet is being established to address low-levels of benzene and ammonia impacts to approximately 15 feet below grade. (see Exhibit B-1 and Exhibit D). Research of the well logs (MW-4) shows a tighter formation vertically, so vertical delineation is not necessary due to the red clay confining layer located at 12 feet below grade. Select Site monitoring wells will also continue to be monitored for both pH and arsenic (the other CEA compounds) in accordance with the proposed monitoring schedule. These compounds have not been mapped on Exhibit B-1, please see Exhibit D for a narrative description.

4. Projected Term of CEA: *(Based on modeling/calculations in the fate and transport description*)

Proposed Duration in Years: _____ Anticipated Expiration Date: _____

or ☒ Indeterminate (*Review instructions before selecting* "Indeterminate" *for the CEA duration.*)

CEA length is indeterminate due to low level concentrations and exclusion of biodegradation (see Exhibit D)

5. ATTACH AND/OR SUBMIT THE FOLLOWING: (*see instructions for additional information/requirements*)

Exhibit A: Site Location Maps – Based on USGS Quadrangle Map;

Exhibit B: CEA Map and Cross Section Figure – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what is required to be included on the map and the cross-section figure.

Exhibit C: GIS Deliverables – CEA Boundary Extent Map. The CEA Boundary Extent Map shall be submitted via email to srpgis_cea@dep.nj.gov. (*See the instructions for detailed GIS deliverable requirements.)*

Identify format of CEA Boundary Extent Map being submitted: ..... ☒ Shape File ☐ CAD File ☐ N/A

If there is a CEA map already on NJ-GeoWeb, does it need to be revised? ..... ☐ Yes ☐ No ☒ N/A

SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 1/18/2018

2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☐ Yes ☐ No ☒ N/A

3. Are there any pumping wells (e.g., potable, industrial, irrigation or recovery wells) within the foot print of the CEA? ☐ Yes ☒ No

   If "Yes" list/attach list of the type and status of any pumping well(s) within CEA:

SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (*see instructions*).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA? ☐ Yes ☒ No

   If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d) and the dates each notification was sent. (*check all that apply*)

   ☒ Municipal and county clerk(s) ..... Dated mailed: 08/25/2021
   ☒ Local, county or regional health department(s) ..... Dated mailed: 08/25/2021
   ☒ Designated County Environmental Health Act agency (if applicable) ..... Dated mailed: 08/25/2021
   ☒ County Planning Board ..... Dated mailed: 08/25/2021
   ☐ Pinelands Commission (if applicable) ..... Dated mailed: _____
   ☐ Owners of real property overlying CEA foot print ..... Dated mailed: _____

2. **List of Names and Addresses** – List below and/or in an attachment, the names/addresses of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA boundaries. If the site property owner differs from the person responsible for conducting the remediation, check here ☐ and enter the site owner's name and address first in the table below. *See instructions for more information regarding the address list.*

Entity or Owner Name	**Notification Address Used** If owner address differs from property address overlying CEA, add an " * " after the address.	**Blocks/Lots overlying CEA owned by this person** Block	Lot(s)
John Mitch, Municipal Clerk	1 Main Street, Woodbridge, NJ		
Dennis Green, Director	Health & Human Services, 2 George Frederick Plaza, Woodbridge, NJ		
Elaine Flynn, County Clerk	County Admin Bldg, 75 Bayard St., New Brunswick, NJ		
Middlesex County Public Safety & Health	35 Kennedy Blvd, East Brunswick, NJ		
Office of Planning	County Admin Bldg, 75 Bayard St., New Brunswick, NJ		
Environmental Health Division	County Admin Bldg, 75 Bayard St., New Brunswick, NJ		

ADDENDUM
Classification Exception Area / Well Restriction Area
Fact Sheet Form

Section B. CEA Component and Vapor Intrusion Information

1. **Contaminant Data** (continued)**:** This CEA/WRA applies only to the contaminants listed on page 1 and in the table below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the GWQS, N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list below the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form Instructions before entering data into the tables below.

Contaminant	Concentration (1)	GWQS (2)	SWQS(3)	VI GWSL(4)

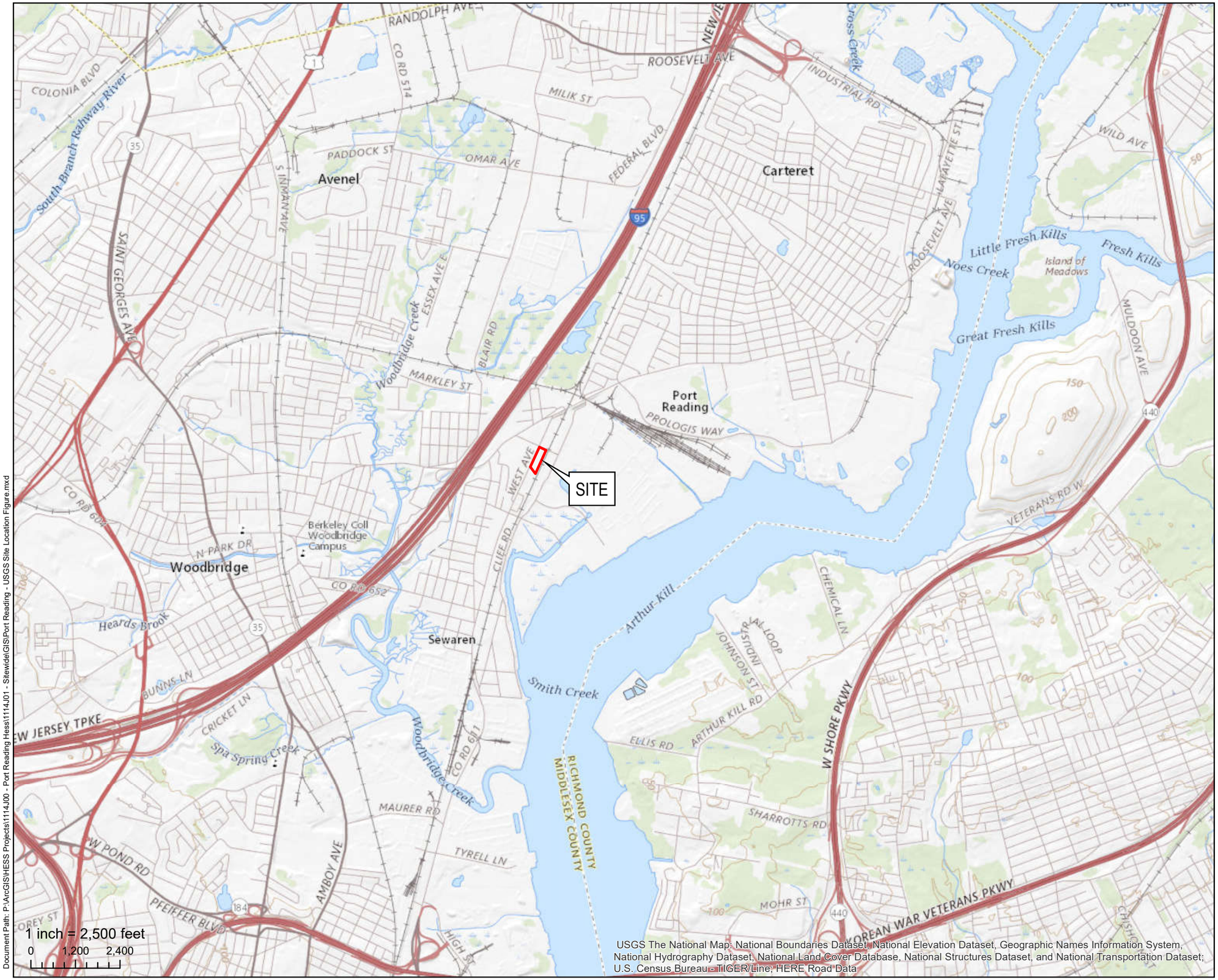
Notes: (1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL)

2. **CEA Boundaries and VI Pathway Status** (continued)**:** List additional parcels included in the CEA. Attach additional Addendum sheets if necessary to list all blocks and lots within the CEA.

For CEA revisions, check here if block and lot numbers have changed: ☐

Block	Lot(s)	Check if off-site	Check if VI pathway was evaluated*	Check if VI pathway status is indeterminate*
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

* Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and status is indeterminate.



USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Document Path: P:\ArcGIS\HESS Projects\1114J00 - Port Reading Hess\1114J01 - Sitewide\GIS\Port Reading - USGS Site Location Figure.mxd

N

LEGEND

QC Laboratory Site Boundary

NEW JERSEY QUADRANGLE LOCATION:
JERSEY CITY, NEW JERSEY

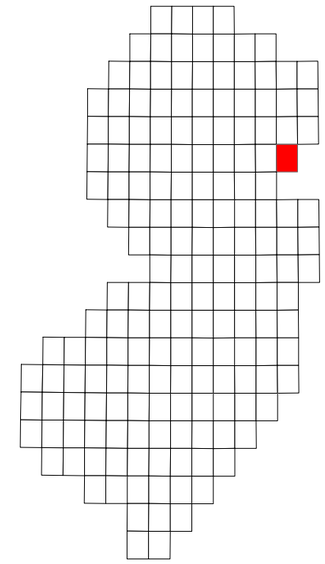


Exhibit A-1:
USGS Site Location Map
QC Laboratory

HESS CORPORATION
FORMER PORT READING TERMINAL
835 WEST AVENUE
PORT READING, NEW JERSEY

Project #:	1114J01	**Drawn:**	4/16/2020
SRP PI#:	006148	**Drawn By:**	KJ

Earth Systems
Environmental Engineering
1625 Highway 71, Belmar, NJ 07719
T. 732.739.6444 | F. 732.739.0451

This map was developed using New Jersey Department of Environmental Protection Geographic Information System Digital Data, but this secondary product has not been verified by NJDEP and is not state Authorized.
Source: NAD 1983 (2011) New Jersey State Plane FIPS 2900 US FT.

N

PER-6R

GRASS

ASPHALT

GRASS

CONCRETE

6,000 GAL. UST

T1
1,000 GAL. UST

MW-1

MW-4

T2
4,000 GAL. UST

MW-2

T3
10,000 GAL. UST

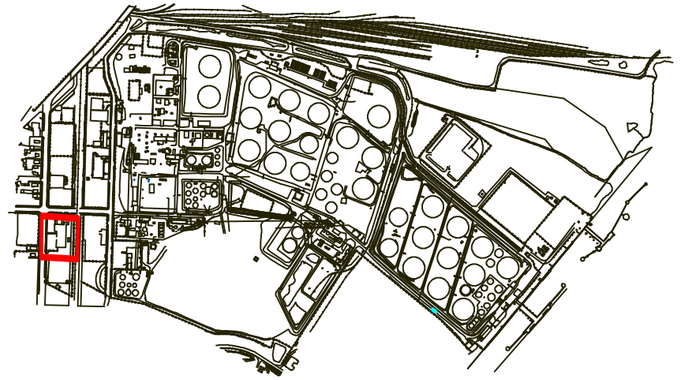
Former Building

TANK 1
10,000 GAL. UST

MW-3

LEGEND

Monitoring Well



0 15 30 60 Feet

1 inch = 30 feet

Exhibit A-2 - QC Lab Parcel

Hess Former Port Reading Complex - QC Lab
835 West Avenue
Port Reading, New Jersey

Drawn By:	RC	**Date :**	4/25/2017

Earth Systems
Environmental Engineering
1625 Highway 71, Belmar, NJ 07719
T. 732.449.0077 | F. 732.449.5810

MILOS WAY

WEST AVENUE

PER-6R

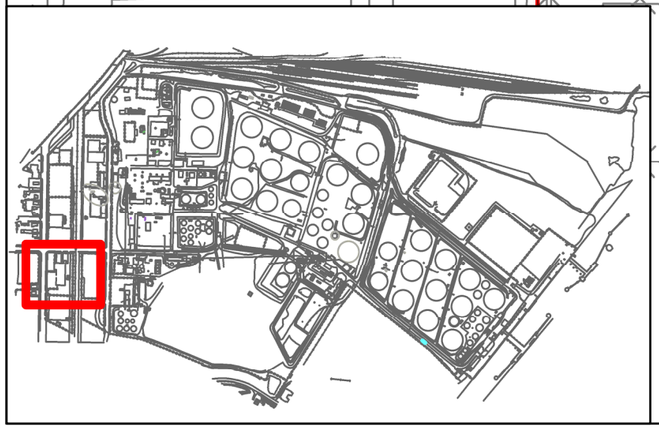
Former QC Lab Building

MW-1

MW-4

MW-2

MW-3



N

0 25 50 100 Feet

LEGEND

- QC LAB Boundary
- CEA Boundary

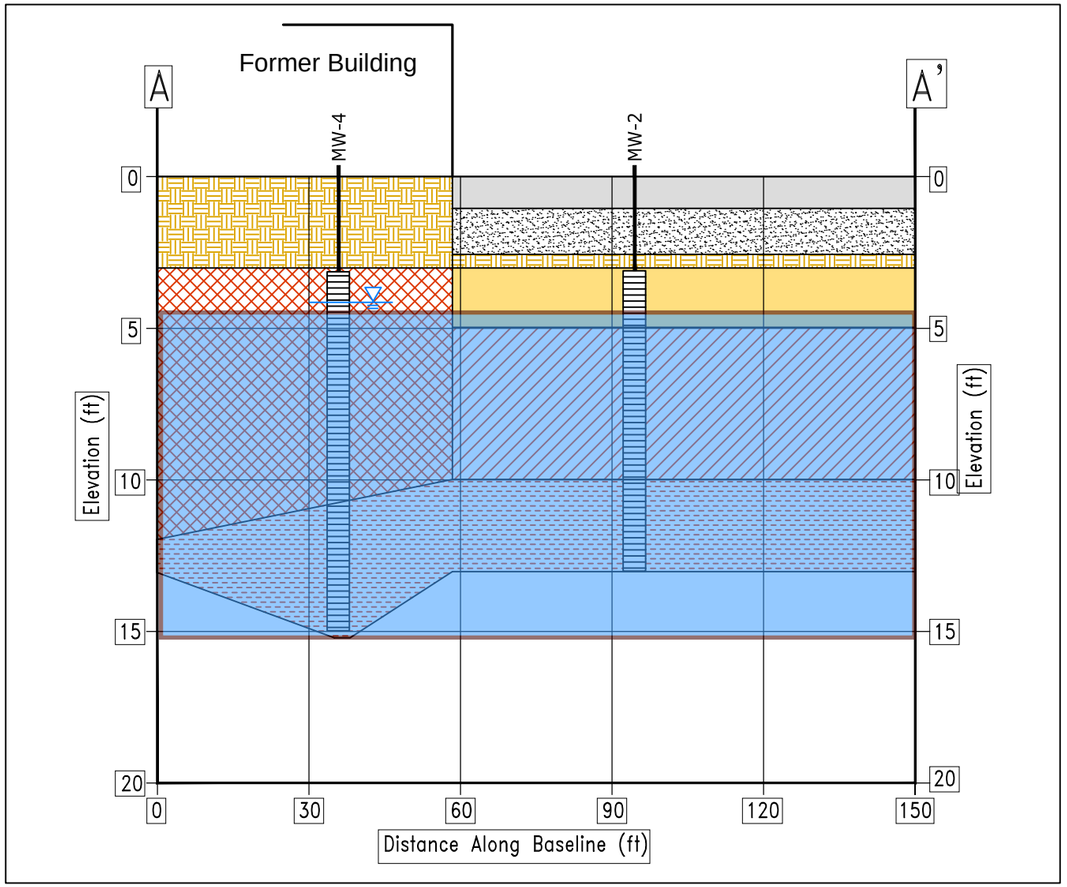
NOTE:
1. CEA Compunds:
   - Benzene
   - Arsenic (not mapped, unrelated to former site operations)
   - Ammonia
   - pH (not mapped)

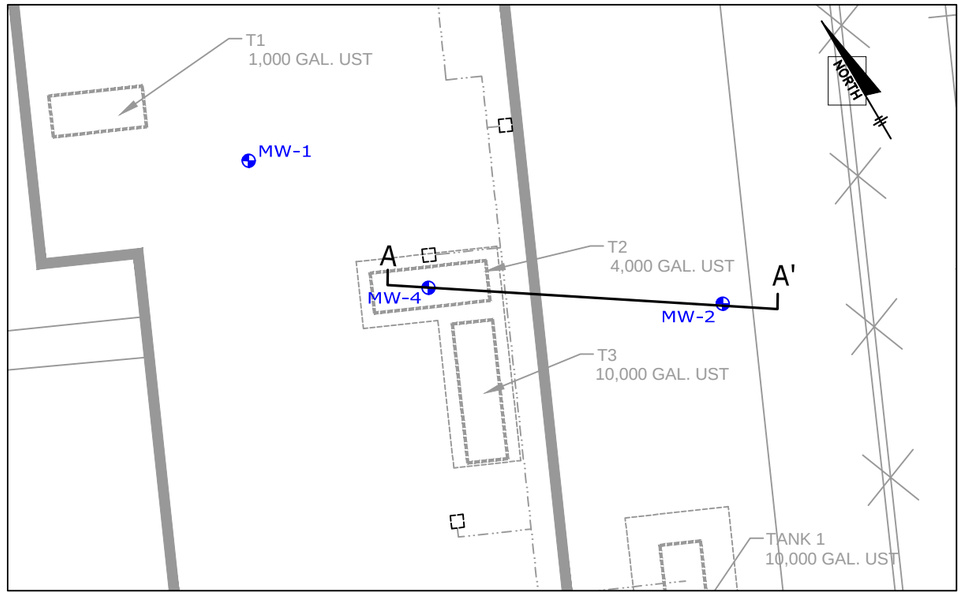
Exhibit B - 1
CEA Boundary Map

QC LABORATORY
835 WEST AVENUE
PORT READING,
MIDDLESEX COUNTY, NEW JERSEY

Project #:	1114J01	**Drawn:**	6/21/2022
SRP PI#:	006148	**Drawn By:**	AE/ RC

Earth Systems
Environmental Engineering
1625 Highway 71, Belmar, NJ 07719
T. 732.739.6444 | F. 732.739.0451





KEYMAP
SCALE: 1"=30'

LEGEND

- ASPHALT
- GRAVEL
- OVERBURDEN
- BROWN SANDY SILT-SATURATED
- RED BROWN SANDY CLAY
- RED BROWN CLAY
- SAND/FILL/MIXED MATERIALS
- MW-4 — MONITORING WELL AND SCREEN LOCATION AND ID
- APPROXIMATE SHALLOW GROUND WATER ELEVATION
- CEA

VERTICAL
1 inch = 5 ft.
5
2.5

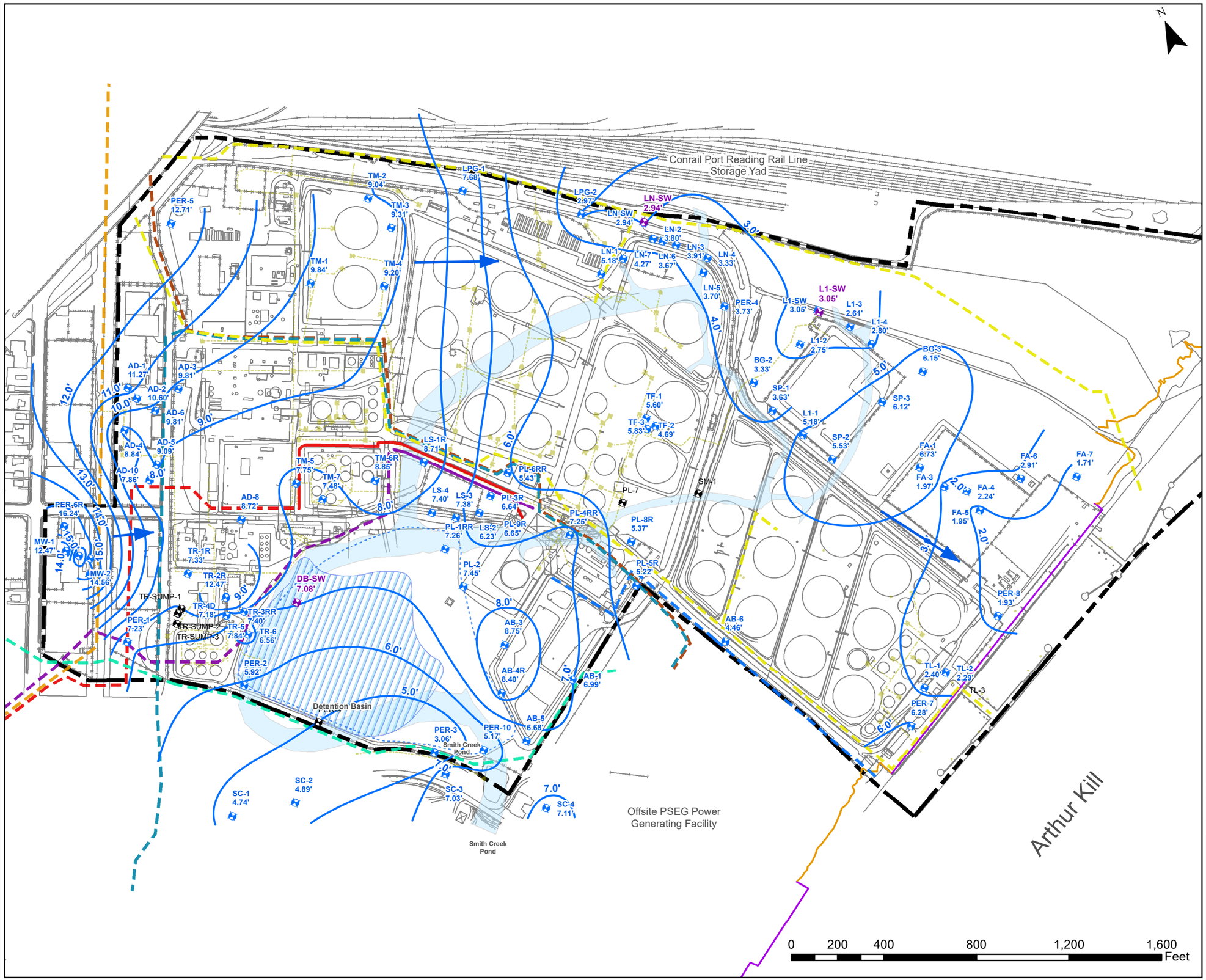
HORIZONTAL
1 inch = 30 ft.
15
30

GEOLOGIC CROSS SECTION

HESS CORPORATION
HESS PORT READING COMPLEX
FORMER QC LABORATORY
835 WEST AVENUE
PORT READING, NEW JERSEY

Earth Systems

Exhibit B-2



LEGEND

- Surface Water Gauge
- Monitoring Well
- Shallow Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour
- AOC 12 Extent
- Detention Basin Present Extents
- Underground Utility/Wastewater System
- Former Smith Creek Channel
- Shoreline
- Bulkhead
- Site Boundary

Pipelines

- 10" Spectra Natural Gas Pipeline
- 12" Spectra Pipeline
- 24" Outfall
- Buckeye Pipeline
- Buckeye Petroleum Pipeline - 608
- Buckeye Petroleum Pipeline - 609
- Colonial Pipeline
- Unknown Pipeline/ Utility
- Williams Pipeline

Pipelines:
- Soild Line: Aboveground
- Dotted Line: Underground

Exhibit B-3
November 2021
Groundwater Elevation Contour
Shallow Wells

HESS CORPORATION
FORMER PORT READING COMPLEX
750 CLIFF ROAD
PORT READING, NEW JERSEY

Project #:	1114J01	**Date:**	1/18/2022
SRP PI#:	006148	**Drawn By:**	RC

Earth Systems Environmental Engineering
1625 Highway 71, Belmar, NJ 07719
T. 732.739.6444 | F. 732.739.0451

Exhibit C - CEA GIS Shape File Submission Email

Kyle Young

To: srpgis_cea@dep.nj.gov
Subject: 006148, CEA
Attachments: 006148_082521.shp.xml; 006148_082521.shx; 006148_082521.dbf; 006148_082521.cpg; 006148_082521.sbn; 006148_082521.sbx; 006148_082521.shp

Name of GIS author Company and mailing address: Earth Systems, Inc. 1625 Highway 71, Belmar, NJ 07719
Name and license number of any LSRP overseeing work: John Virgie (576279)
Email for LSRP overseeing work: jvirgie@earthsys.net
Name of professional performing GIS work: Ryan Carr
Email for Professional performing GIS work: rcarr@earthsys.net
Phone Number for Professional performing GIS work: 732-739-6444
Program Interest Number for Site: 006148
Name of Site as known to NJDEP: AOC-19: QC Lab/AOC-90 drum Storage Area, Hess Corporation - Former Port Reading Complex (HC-PR)
Physical address of Site: 835 West Avenue, Port Reading, NJ 07064
Submission Type Suffix: Natural Remediation
Subject Item ID: Within the site boundary

Kyle Young | Environmental Scientist | kyoung@earthsys.net
1625 Highway 71 | Belmar, NJ 07719
T. 732.739.6444 | M. 732.948.9989

Earth Systems
Environmental Engineering

CLASSIFICATION EXCEPTION AREA (CEA)

EXHIBIT D

1 Background Information

This Classification Exception Area (CEA) is being established for the area of concern (AOC) designated as AOC-19: Former Quality Control Laboratory (QC Lab or Site) associated with the Hess Corporation Former Port Reading Complex (HC-PR). The former QC Lab is located on Block 664.01 and Lot 1.01 (835 West Avenue, Port Reading, Middlesex County, New Jersey). The building on-site was demolished in 2015, and the recycled building concrete was reused as clean backfill. Recycled concrete has been known to produce leachate that has high alkalinity and consequently could be the source of the elevated pH readings in groundwater samples collected from MW-1 and MW-4.

As part of the investigation of AOC-19, a groundwater sample was collected from a temporary well point (TW-T2-5) in 2016 and several volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were detected above the Ground Water Quality Standard (GWQS). To address the groundwater impacts present in the former UST T2 location, 478 tons of soil were excavated for off-site disposal. Monitoring wells MW-1, MW-2, MW-3, and PER-6R were installed prior to soil remediation and monitoring well MW-4 was installed in the former temporary well location (TW-T2-5) to determine if soil remediation activities were effective. Soil remediation activities were completed June 2016.

Groundwater sampling were collected via low-flow sampling methodology in accordance with the NJDEP's *Field Sampling Procedures Manual* (FSPM), except for the November 26, 2018 sampling which was collected via volume average purging methodology in accordance with the NJDEP's FSPM.

Post remediation groundwater samples have been collected in January 2017, February 2017 (MW-4 only), November 2017, November 2018, November 2019, December 2020, July 2021 (MW-1 and MW-4 only), and November 2021 and sporadic exceedances of benzene have been detected in the groundwater samples, indicating only residual impacts remain. Arsenic, which is unrelated to the former underground storage tanks (USTs), has been detected over the Groundwater Quality Standard (GWQS) in several rounds of groundwater sampling. Ammonia has been detected over the GWQS in well MW-4 only for the last several rounds of groundwater sampling. pH has been detected between 11 and 12 in MW-1 and MW-4. The following table summarizes the groundwater concentrations that have exceeded the GWQS for the last four (4) rounds of sampling.

Well	Sample Date	Compound	Concentration (ppb)	GWQS (ppb)
MW-1	11/6/2019	pH	11.78	6.5 – 8.5
MW-1	12/2/2020	pH	11.92	6.5 – 8.5
MW-1	7/1/2021	pH	11.99	6.5 – 8.5
MW-1	11/30/2021	pH	12.54	6.5 – 8.5
MW-2	11/26/2018	arsenic	2.7	3
MW-2	11/6/2019	arsenic	13.5	3
MW-2	12/1/2020	arsenic	1.5	3
MW-2	11/30/2021	arsenic	6.3	3
MW-3	11/26/2018	No exceedances	NA	NA
MW-3	11/6/2019	pH	6.5	6.5 – 8.5
MW-3	12/1/2020	No exceedances	NA	NA
MW-3	11/30/2021	No exceedances	NA	NA
MW-4	11/26/2018	benzene	0.58	1
MW-4	11/6/2019	benzene	1.8	1
MW-4	12/1/2020	benzene	0.63	1
MW-4	11/30/2021	benzene	1.1	1
MW-4	11/26/2018	arsenic	3.3	3
MW-4	11/6/2019	arsenic	4.6	3
MW-4	12/1/2020	arsenic	2.7	3
MW-4	11/30/2021	arsenic	2.89	3
MW-4	11/6/2019	ammonia	8300	3000
MW-4	12/1/2020	ammonia	4700	3000
MW-4	7/1/2021	ammonia	5200	3000
MW-4	11/30/2021	ammonia	3760	3000
MW-4	11/6/2019	pH	11.77	6.5 – 8.5
MW-4	12/1/2020	pH	11.69	6.5 – 8.5
MW-4	7/1/2021	pH	12	6.5 – 8.5
MW-4	11/30/2021	pH	12.92	6.5 – 8.5
PER-6R	11/26/2018	arsenic	1.5	3
PER-6R	11/6/2019	arsenic	4.1	3
PER-6R	12/2/2020	arsenic	3	3
PER-6R	11/30/2021	arsenic	3.3	3

ppb- parts per billion

This CEA is being established to address low-level concentrations of benzene, arsenic, ammonia, and pH. Once the CEA is established and the Remedial Action Permit (RAP) is approved, the Licensed Site Remediation Professional (LSRP) will issue a Limited Restricted Use Response Action Outcome (RAO) to close out the AOC. Results from 2016 through 2021 have been presented on Figure D-1.

2 Description of Fate and Transport – CEA Longevity

The contaminants of concern (COCs) associated with the site are benzene, arsenic, ammonia, and pH. Due to the low levels detected in the groundwater samples, plume extent was calculated but the calculations did not accurately depict groundwater conditions at the Site. In addition, due to high pH concentrations within the building footprint, plume extents were estimated based on actual Site groundwater data. As summarized in the monitoring plan, groundwater concentrations will be monitored annually and the plume extent adjusted, if necessary.

- The CEA for ammonia and benzene was developed using actual groundwater sampling results.
- Arsenic will be monitored as part of the CEA but arsenic concentrations are not attributed to historic operations or a historic release.

The COCs within the CEA will be revised accordingly over time.

As per current NJDEP requirements for monitoring the protectiveness of an institutional control (i.e. the CEA), a Biennial Certification will be submitted every two (2) years, subsequent to the approval of the CEA. The Biennial Certification will be prepared in accordance with NJDEP guidance and/or forms in effect at the time of the submittal of the Biennial Certification.

3 Horizontal and Vertical Extent of CEA

The horizontal approximate extent of the CEA (for benzene and ammonia) is shown in Exhibit B-1. Groundwater direction generally flows in the east, southeast direction. MW-4 has been delineated by MW-1, MW-2, MW-3, and PER-6. The delineation wells have shown natural background conditions or are less than the GWQS as noted in Figure D-1. The vertical depth of the CEA has been assumed to be confined to the shallow groundwater table, approximately 15 feet below grade. The vertical depth has been assumed based on a review of the monitoring well logs located on-site which show a tight formation of red clay a confined layer located at approximately 12 feet below grade.

4 Monitored Natural Attenuation (MNA)

CEAs are typically of limited duration and are related to the term of a permit approval or estimated time for completion of a remediation.

MNA is the remedial action selected to address benzene and ammonia impacts at the Site. MNA refers to the reliance on natural attenuation processes to achieve the applicable ground water remediation standard. Natural attenuation processes include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in ground water. These processes include biodegradation, dispersion, dilution, sorption, volatilization, and chemical or biological stabilization, transformation, or destruction of contaminants. Biodegradation is not expected to be significant to natural attenuation based on site pH that is identified as related to concrete reuse. Any plume projections do not specifically incorporate biological processes and are based on actual groundwater data.

MNA is the appropriate remedy to address the benzene and ammonia groundwater impacts associated with this Site for the following reasons:

- Soil remediation was completed at the Site which effectively removed all source impacted soils.

5 Monitoring Schedule

Groundwater at the Site is impacted with low levels of benzene, arsenic, pH, and ammonia. Groundwater sampling of the QC lab wells will be conducted on an annual basis for benzene, arsenic, pH, and ammonia analysis.

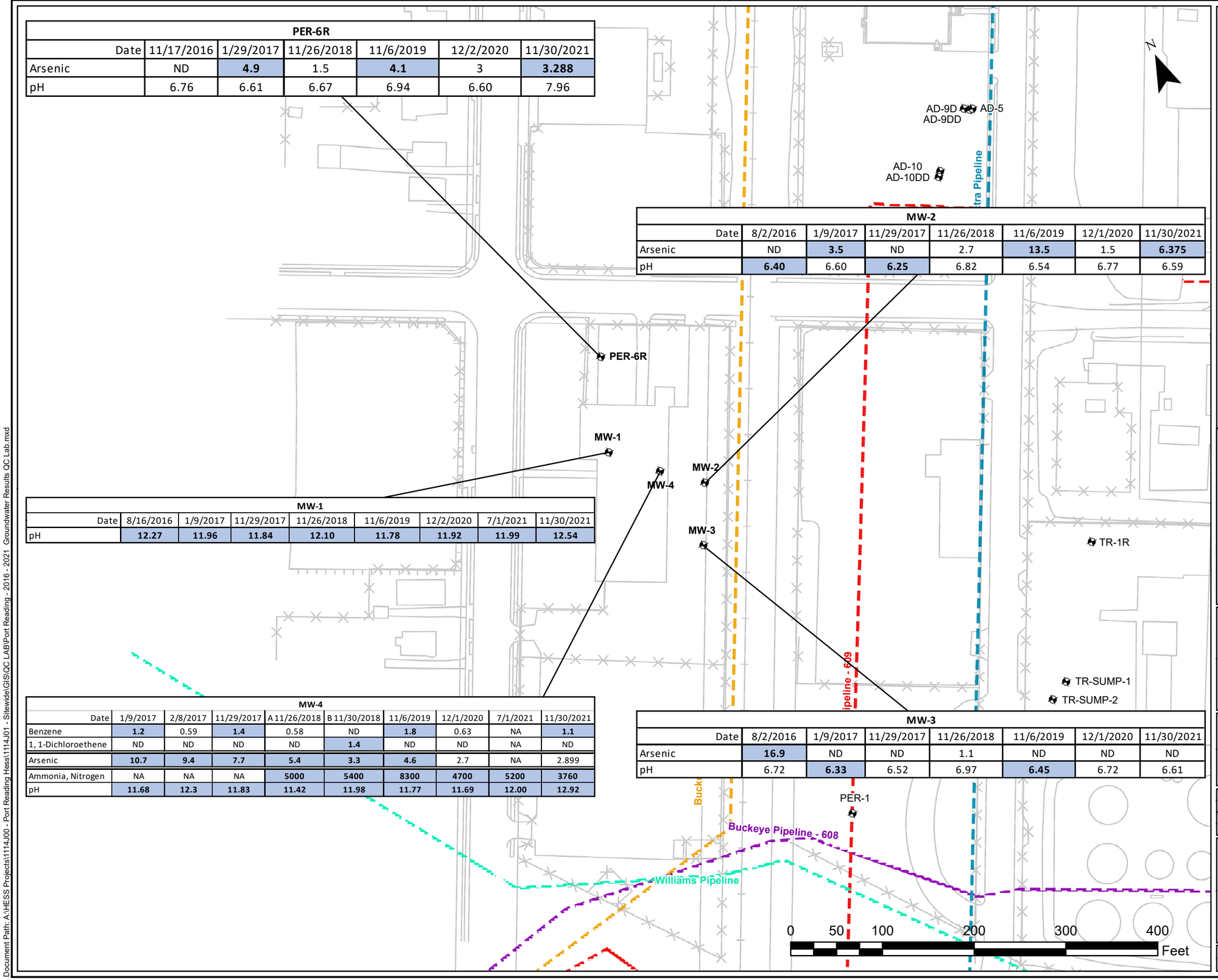
PER-6R						
Date	11/17/2016	1/29/2017	11/26/2018	11/6/2019	12/2/2020	11/30/2021
Arsenic	ND	**4.9**	1.5	**4.1**	3	**3.288**
pH	6.76	6.61	6.67	6.94	6.60	7.96

MW-2							
Date	8/2/2016	1/9/2017	11/29/2017	11/26/2018	11/6/2019	12/1/2020	11/30/2021
Arsenic	ND	**3.5**	ND	2.7	**13.5**	1.5	**6.375**
pH	**6.40**	6.60	**6.25**	6.82	6.54	6.77	6.59

MW-1								
Date	8/16/2016	1/9/2017	11/29/2017	11/26/2018	11/6/2019	12/2/2020	7/1/2021	11/30/2021
pH	**12.27**	**11.96**	**11.84**	**12.10**	**11.78**	**11.92**	**11.99**	**12.54**

MW-4									
Date	1/9/2017	2/8/2017	11/29/2017	A 11/26/2018	B 11/30/2018	11/6/2019	12/1/2020	7/1/2021	11/30/2021
Benzene	**1.2**	0.59	**1.4**	0.58	ND	**1.8**	0.63	NA	**1.1**
1, 1-Dichloroethene	ND	ND	ND	ND	**1.4**	ND	ND	NA	ND
Arsenic	**10.7**	**9.4**	**7.7**	**5.4**	**3.3**	**4.6**	2.7	NA	2.899
Ammonia, Nitrogen	NA	NA	NA	**5000**	**5400**	**8300**	**4700**	**5200**	**3760**
pH	**11.68**	**12.3**	**11.83**	**11.42**	**11.98**	**11.77**	**11.69**	**12.00**	**12.92**

MW-3							
Date	8/2/2016	1/9/2017	11/29/2017	11/26/2018	11/6/2019	12/1/2020	11/30/2021
Arsenic	**16.9**	ND	ND	1.1	ND	ND	ND
pH	6.72	**6.33**	6.52	6.97	**6.45**	6.72	6.61



LEGEND

- Monitoring Well
- 10" Spectra Natural Gas Pipeline
- 12" Spectra Pipeline
- 24" Outfall
- Buckeye Pipeline
- Buckeye Petroleum Pipeline - 608
- Buckeye Petroleum Pipeline - 609
- Colonial Pipeline
- Unknown Pipeline/ Utility
- Williams Pipeline

NJ Groundwater Criteria (ug/L)	
Benzene	**1**
1,1-Dichloroethene	**1**
Arsenic	**3**
Ammonia, Nitrogen	**3000**
pH	**6.5-8.5**

NOTES:
1. All results provided in ug/L (ppb).
2. pH values taken at time of sampling using certified and NJDEP calibrated Hariba U-52 Multimeter.

ND: Non-Detect
Exceedances highlighted in blue.

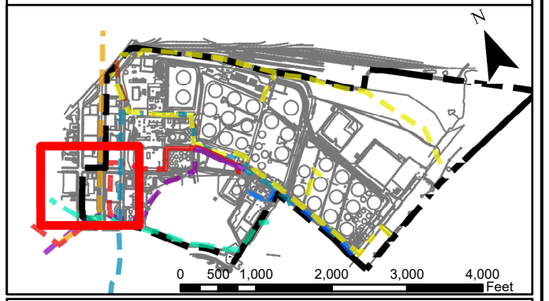


FIGURE: D-1
QC Lab
Historic Groundwater Exceedances Map

HESS CORPORATION
FORMER PORT READING COMPLEX
750 CLIFF ROAD
PORT READING, NEW JERSEY

Project #:	1114J01	**Date:**	05/12/2022
SRP PI#:	006148	**Drawn By:**	RC

Earth Systems
Environmental Engineering
1625 Highway 71, Belmar, NJ 07719
T. 732.739.6444 | F. 732.739.0451

Former Hess Coporation Port Reading Terminal
QC Laboratory Parcel
835 West Avenue
Port Reading, NJ

Well ID	Lab ID	Sample Date	Acetone	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone (MEK)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cyclohexane	1,2-Dibromo-3-chloropropane	Dibromochloromethane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
GWQS			6000	1	-	1	4	10	300	700	1	50	5	70	NS	NS	0.02	1	0.03	600	600	75	1000	50	2	1	70	100
MW-1	JC25088-1	8/2/2016	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC56220-2	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC78529-12	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC98148-13	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JD17077-1	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC25088-2	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC56220-3	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC78529-13	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC98148-14	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JD17100-10	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC25088-3	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC35066-3	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC56220-4	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC78529-14	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC98148-15	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JD17100-9	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC35066-4	1/9/2017	105	1.2	ND	ND	ND	ND	4.7 J	0.48 J	ND	ND	ND	ND	ND	2.7 J	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC35066-4	2/8/2017	54.3	0.59	ND	ND	ND	ND	4.3 J	0.40 J	ND	ND	ND	ND	ND	0.76 J	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC56220-5	11/29/2017	25	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.67 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC78529-15	11/26/2018	15.3	0.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC78811-5	11/30/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND
MW-4	JC98148-16	11/6/2019	15.1	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JD17100-11	12/1/2020	8.4 J	0.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC31999-7	11/17/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC56220-1	1/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC78529-16	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC98148-17	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JD17077-2	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Well ID	Lab ID	Sample Date	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Freon 113	2-Hexanone	Isopropylbenzene	Methyl Acetate	Methylcyclohexane	Methyl Tert Butyl Ether	4-Methyl-2-pentanone(MIBK)	Methylene chloride	Styrene	Tert Butyl Alcohol	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (total)	Total TIC, Volatile
GWQS			1	NS	NS	700	20000	40	700	7000	NS	70	-	3	100	100	1	1	600	NS	9	30	3	1	2000	1	1000	-
MW-1	JC25088-1	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND (1.5)	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27 J	72 J
MW-1	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-1	JC56220-2	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11 J
MW-1	JC78529-12	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	35 J
MW-1	JC98148-13	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4 J
MW-1	JD17077-1	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC25088-2	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC56220-3	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.8	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC78529-13	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.84 J	ND	ND	ND	28.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	34 J
MW-2	JC98148-14	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JD17100-10	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC25088-3	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC35066-3	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC56220-4	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC78529-14	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30 J
MW-3	JC98148-15	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.9 J
MW-3	JD17100-9	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-4	JC35066-4	1/9/2017	ND	ND	ND	8.6	ND	ND	2.6	ND	15.8	13	ND	ND	ND	NA	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	16.9	287 J
MW-4	JC35066-4	2/8/2017	ND	ND	ND	4	ND	ND	1.5	ND	5.4	8.7	ND	ND	ND	NA	ND	ND	0.91 J	ND	ND	ND	ND	ND	ND	ND	7.5	173.6 J
MW-4	JC56220-5	11/29/2017	ND	ND	ND	5	ND	ND	1.7	ND	5.4	5.4	ND	ND	0.69 J	NA	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	10.3	194.7 J
MW-4	JC78529-15	11/26/2018	ND	ND	ND	1.8	ND	ND	ND	ND	2.0 J	0.93 J	ND	ND	ND	61.1	ND	ND	0.79 J	ND	ND	ND	ND	ND	ND	ND	3.9	41.8 J
MW-4	JC78811-5	11/30/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-4	JC98148-16	11/6/2019	ND	ND	ND	4.8	ND	ND	1.6	ND	6	1.8	ND	ND	ND	24.1	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	10.4	227.7 J
MW-4	JD17100-11	12/1/2020	ND	ND	ND	1.7	ND	ND	ND	ND	1.8 J	0.73 J	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	4.1	40.4 J
PER-6R	JC31999-7	11/17/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC56220-1	1/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC78529-16	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21 J
PER-6R	JC98148-17	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JD17077-2	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

NA - Not Analyzed, ND - Non-Detect, J - Estimated Concentration

Former Hess Coporation Port Reading Terminal
QC Laboratory Parcel
835 West Avenue
Port Reading, NJ

Well ID	Lab ID	Sample Date	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Atrazine	Benzaldehyde	Benzo(g,h,i)perylene	4-Bromophenyl phenyl ether	Butyl benzyl phthalate	1,1'-Biphenyl	2-Chloronaphthalene	4-Chloroaniline	Carbazole	Caprolactam	Chrysene	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	2,2'-Oxybis(1-chloropropane)	4-Chlorophenyl phenyl ether	2,4-Dinitrotoluene	2,6-Dinitrotoluene	3,3'-Dichlorobenzidine	Dibenzofuran	Di-n-butyl phthalate	Di-n-octyl phthalate	Diethyl phthalate	Dimethyl phthalate
GWQS			400	100	700	2000	3	-	100	-	100	400	600	30	-	4000	5	-	7	300	-	-	-	30	-	700	100	6000	100
MW-1	JC25088-1	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC56220-2	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC78529-12	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JC98148-13	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	JD17077-1	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC25088-2	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC56220-3	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC78529-13	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JC98148-14	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	JD17100-10	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC25088-3	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC35066-3	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC56220-4	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC78529-14	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JC98148-15	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	JD17100-9	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC35066-4	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC35066-4	2/8/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC56220-5	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC78529-15	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC78811-5	11/30/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JC98148-16	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	JD17100-11	12/1/2020	ND	ND	0.67 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC31999-7	11/17/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC56220-1	1/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC78529-16	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC98148-17	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JD17077-2	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Well ID	Lab ID	Sample Date	bis(2-Ethylhexyl)phthalate	Fluoranthene	Fluorene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	2-Methylnaphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	N-Nitrosodiphenylamine	Phenanthrene	Pyrene	1,2,4,5-Tetrachlorobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Hexachlorobenzene	Hexachlorobutadiene	Indeno(1,2,3-cd)pyrene	1,4-Dioxane	Total TIC, Semi-Volatile
GWQS			3	300	300	40	7	40	30	-	-	-	300	6	10	10	-	200	-	0.1	0.1	0.2	0.5	0.3	0.02	1	0.2	0.4	-
MW-1	JC25088-1	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.106	12.5 J
MW-1	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-1	JC56220-2	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-1	JC78529-12	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-1	JC98148-13	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-1	JD17077-1	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC25088-2	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC35066-1	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC56220-3	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC78529-13	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JC98148-14	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-2	JD17100-10	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC25088-3	8/2/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC35066-3	1/9/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC56220-4	11/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JC78529-14	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0460 J	ND	ND	ND	ND	ND	ND	ND	ND	4.2 J
MW-3	JC98148-15	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-3	JD17100-9	12/1/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
MW-4	JC35066-4	1/9/2017	ND	ND	0.49 J	ND	ND	ND	9.2	ND	ND	ND	2	ND	ND	ND	0.44 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	275.2 J
MW-4	JC35066-4	2/8/2017	ND	ND	ND	ND	ND	ND	4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	161.1 J
MW-4	JC56220-5	11/29/2017	ND	ND	ND	ND	ND	ND	8.6	ND	ND	ND	2	ND	ND	ND	0.54 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190.2 J
MW-4	JC78529-15	11/26/2018	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	0.58 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.7 J
MW-4	JC78811-5	11/30/2018	ND	ND	ND	ND	ND	ND	3.2	ND	ND	ND	0.84 J	ND	ND	ND	0.17 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21.2 J
MW-4	JC98148-16	11/6/2019	ND	ND	0.26 J	ND	ND	ND	4	ND	ND	ND	0.85 J	ND	ND	ND	0.40 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0885 J	75.2 J
MW-4	JD17100-11	12/1/2020	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	0.38 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC31999-7	11/17/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC56220-1	1/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC78529-16	11/26/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
PER-6R	JC98148-17	11/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.271**	0.1	0.166	0.0690 J	ND	ND	ND	0.0937 J	ND	0
PER-6R	JD17077-2	12/2/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.5 J

NA - Not Analyzed, ND - Non-Detect, J - Estimated Concentration

Former Hess Coporation Port Reading Terminal
QC Laboratory Parcel
835 West Avenue
Port Reading, NJ

Well ID	Lab ID	Sample Date	Aluminum*	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron*	Lead	Magnesium	Manganese*	Mercury	Nickel	Selenium	Silver	Sodium*	Thallium	Zinc	Nitrogen, Ammonia
GWQS			200	6	3	6000	1	4	-	70	100	1300	300	5	-	50	2	100	40	40	50000	2	2000	3000
MW-1	JC25088-1	8/2/2016	**4240**	ND	ND	ND	ND	ND	109000	21.1	ND	30.9	ND	ND	ND	ND	ND	ND	ND	ND	**94800**	ND	ND	NA
MW-1	JC35066-1	1/9/2017	**1760**	ND	ND	ND	ND	ND	98100	10.7	ND	ND	150	ND	ND	ND	ND	ND	ND	ND	49000	ND	ND	NA
MW-1	JC56220-2	11/29/2017	ND	ND	ND	ND	ND	ND	26600	ND	ND	ND	**1450**	ND	9710	**2840**	ND	ND	ND	ND	**206000**	ND	ND	NA
MW-1	JC78529-12	11/26/2018	**1830**	ND	1.3	ND	ND	ND	102000	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20200	ND	ND	ND
MW-1	JC98148-13	11/6/2019	**2090**	ND	2.2	ND	ND	ND	96400	17.1	ND	34.1	**592**	ND	ND	ND	ND	ND	ND	ND	22300	ND	ND	ND
MW-1	JD17077-1	12/2/2020	**1250**	ND	1.4	ND	ND	ND	75600	ND	ND	16.5	ND	ND	ND	ND	ND	ND	ND	ND	14700	ND	ND	ND
MW-2	JC25088-2	8/2/2016	ND	ND	ND	588	ND	ND	63900	ND	ND	ND	**3770**	ND	28200	**8580**	ND	26.2	ND	ND	**273000**	ND	ND	NA
MW-2	JC35066-1	1/9/2017	**521**	ND	**3.5**	261	ND	ND	30100	ND	ND	ND	**764**	ND	12600	**3850**	ND	14.6	ND	ND	**197000**	ND	ND	NA
MW-2	JC56220-3	11/29/2017	ND	ND	ND	ND	ND	ND	26600	ND	ND	ND	**1450**	ND	9710	**2840**	ND	ND	ND	ND	**206000**	ND	ND	NA
MW-2	JC78529-13	11/26/2018	**261**	ND	2.7	ND	ND	ND	28000	ND	ND	ND	**838**	ND	ND	**419**	ND	ND	ND	ND	**74800**	ND	ND	390
MW-2	JC98148-14	11/6/2019	**256**	ND	**13.5**	ND	ND	ND	20400	ND	ND	22.9	**6520**	ND	ND	**343**	ND	ND	ND	ND	**88400**	ND	36.8	ND
MW-2	JD17100-10	12/1/2020	ND	ND	1.5	ND	ND	ND	25300	ND	ND	ND	**492**	ND	ND	**84**	ND	ND	ND	ND	27700	ND	ND	210
MW-3	JC25088-3	8/2/2016	**1770**	ND	**16.9**	ND	ND	ND	12000	ND	ND	ND	**15100**	ND	ND	**1980**	ND	ND	ND	ND	**53400**	ND	ND	NA
MW-3	JC35066-3	1/9/2017	**2230**	ND	ND	ND	ND	ND	11000	ND	ND	ND	**6180**	ND	ND	**1860**	ND	ND	ND	ND	46600	ND	20.7	NA
MW-3	JC56220-4	11/29/2017	**920**	ND	ND	ND	ND	ND	10500	ND	ND	ND	**2590**	ND	ND	**1390**	ND	ND	ND	ND	37500	ND	ND	NA
MW-3	JC78529-14	11/26/2018	**436**	ND	1.1	ND	ND	ND	17900	ND	ND	13	**809**	ND	ND	**65.8**	ND	ND	ND	ND	14000	ND	ND	ND
MW-3	JC98148-15	11/6/2019	ND	ND	ND	ND	ND	ND	17800	ND	ND	ND	**324**	ND	ND	**834**	ND	ND	ND	ND	25000	ND	53.9	410
MW-3	JD17100-9	12/1/2020	ND	ND	ND	ND	ND	ND	16200	ND	ND	16.3	**323**	ND	ND	**134**	ND	ND	ND	ND	ND	ND	25.7	ND
MW-4	JC35066-4	1/9/2017	**2080**	ND	**10.7**	ND	ND	ND	107000	ND	ND	21.7	**547**	ND	ND	ND	ND	ND	ND	ND	**60000**	ND	ND	NA
MW-4	JC35066-4	2/8/2017	**2620**	ND	**9.4**	ND	ND	ND	83400	ND	ND	ND	**1410**	ND	ND	19.2	ND	ND	ND	ND	43000	ND	ND	NA
MW-4	JC56220-5	11/29/2017	**3950**	ND	**7.7**	ND	ND	ND	110000	ND	ND	ND	**436**	ND	ND	ND	0.27	ND	ND	ND	**63500**	ND	ND	NA
MW-4	JC78529-15	11/26/2018	**9030**	ND	**5.4**	ND	ND	ND	62700	ND	ND	ND	**9400**	ND	ND	**85.5**	0.42	ND	ND	ND	ND	ND	ND	**5000**
MW-4	JC78811-5	11/30/2018	**2870**	ND	**3.3**	ND	ND	ND	64300	ND	ND	ND	**736**	ND	ND	ND	ND	ND	ND	ND	39800	ND	ND	**5400**
MW-4	JC98148-16	11/6/2019	**3840**	ND	**4.6**	ND	ND	ND	99300	ND	ND	20.7	ND	ND	ND	ND	0.27	ND	ND	ND	**58600**	ND	ND	**8300**
MW-4	JD17100-11	12/1/2020	**2240**	ND	2.7	ND	ND	ND	48300	ND	ND	ND	239	ND	ND	ND	ND	ND	ND	ND	32200	ND	ND	**4700**
PER-6R	JC31999-7	11/17/2016	**494**	ND	ND	ND	ND	ND	76900	ND	ND	15.3	**438**	ND	8590	ND	ND	ND	ND	ND	**63300**	ND	ND	NA
PER-6R	JC56220-1	1/29/2017	**1420**	ND	**4.9**	ND	ND	ND	43800	ND	ND	20	**5080**	3.8	6410	ND	ND	ND	ND	ND	26600	ND	ND	NA
PER-6R	JC78529-16	11/26/2018	**411**	ND	1.5	ND	ND	ND	31000	ND	ND	12.4	**886**	ND	ND	16.1	ND	ND	ND	ND	ND	ND	ND	ND
PER-6R	JC98148-17	11/6/2019	**2860**	ND	**4.1**	ND	ND	ND	55300	ND	ND	23.9	**4710**	ND	7380	ND	ND	ND	ND	ND	12600	ND	27.5	<200
PER-6R	JD17077-2	12/2/2020	**1350**	ND	3	ND	ND	ND	43200	ND	ND	26.1	**3520**	ND	6690	ND	ND	ND	ND	ND	ND	ND	37.3	ND

*Not considered a Contaminant of Concern for the AOC (so exceedances are not highlighted), NA - Not Analyzed, ND - Non-Detect, J - Estimated Concentration

Hess Corporation Former Port Reading Complex
750 Cliff Road, Port Reading NJ
AOC 19 - QC Laboratory
Groundwater Analytical Results (November 2021)

Client Sample ID:	NJ Groundwater Criteria (NJAC 7:9C 9/4/18)	MW-1			MW-2			MW-3			MW-4			PER-6R		
Lab Sample ID:		L2165570-01			L2165570-02			L2165570-03			L2165570-04			L2165570-05		
Date Sampled:		11/30/2021			11/30/2021			11/30/2021			11/30/2021			11/30/2021		
Matrix:		WATER			WATER			WATER			WATER			WATER		
ANALYTE	**(ug/l)**	**Conc**	**Q**	**MDL**	**Conc**	**Q**	**MDL**	**Conc**	**Q**	**MDL**	**Conc**	**Q**	**MDL**	**Conc**	**Q**	**MDL**
VOLATILE ORGANICS BY GC/MS																
1,2-Dibromo-3-chloropropane	0.02	ND		0.35	ND		0.35	ND		0.35	ND		0.35	ND		0.35
1,2-Dibromoethane	0.03	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
Methylene chloride	3	ND		0.68	ND		0.68	ND		0.68	ND		0.68	ND		0.68
1,1-Dichloroethane	50	ND		0.21	ND		0.21	ND		0.21	ND		0.21	ND		0.21
Chloroform	70	ND		0.22	ND		0.22	ND		0.22	ND		0.22	ND		0.22
Carbon tetrachloride	1	ND		0.13	ND		0.13	ND		0.13	ND		0.13	ND		0.13
1,2-Dichloropropane	1	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
Dibromochloromethane	1	ND		0.15	ND		0.15	ND		0.15	ND		0.15	ND		0.15
1,1,2-Trichloroethane	3	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
Tetrachloroethene	1	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18
Chlorobenzene	50	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18
Trichlorofluoromethane	2000	ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
1,2-Dichloroethane	2	ND		0.13	ND		0.13	ND		0.13	ND		0.13	ND		0.13
1,1,1-Trichloroethane	30	ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
Bromodichloromethane	1	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
trans-1,3-Dichloropropene		ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
cis-1,3-Dichloropropene		ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
1,3-Dichloropropene, Total	1	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
Bromoform	4	ND		0.25	ND		0.25	ND		0.25	ND		0.25	ND		0.25
1,1,2,2-Tetrachloroethane	1	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17
Benzene	1	0.09	J	0.08	ND		0.08	ND		0.08	**1.1**		**0.08**	ND		0.08
Toluene	600	ND		0.2	ND		0.2	ND		0.2	1.4		0.2	ND		0.2
Ethylbenzene	700	ND		0.17	ND		0.17	ND		0.17	3.1		0.17	ND		0.17
Chloromethane		ND		0.2	ND		0.2	ND		0.2	ND		0.2	ND		0.2
Bromomethane	10	ND		0.26	ND		0.26	ND		0.26	ND		0.26	ND		0.26
Vinyl chloride	1	ND		0.07	ND		0.07	ND		0.07	ND		0.07	ND		0.07
Chloroethane		ND		0.13	ND		0.13	ND		0.13	ND		0.13	ND		0.13
1,1-Dichloroethene	1	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17
trans-1,2-Dichloroethene	100	ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
Trichloroethene	1	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18
1,2-Dichlorobenzene	600	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18
1,3-Dichlorobenzene	600	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
1,4-Dichlorobenzene	75	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
Methyl tert butyl ether	70	ND		0.17	0.2	J	0.17	ND		0.17	0.36	J	0.17	ND		0.17
p/m-Xylene		ND		0.33	ND		0.33	ND		0.33	4.3		0.33	ND		0.33
o-Xylene		ND		0.39	ND		0.39	ND		0.39	1.5		0.39	ND		0.39
Xylenes, Total	1000	ND		0.33	ND		0.33	ND		0.33	5.8		0.33	ND		0.33
cis-1,2-Dichloroethene	70	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
1,2-Dichloroethene, Total		ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
Styrene	100	ND		0.36	ND		0.36	ND		0.36	2.5		0.36	ND		0.36
Dichlorodifluoromethane	1000	ND		0.24	ND		0.24	ND		0.24	ND		0.24	ND		0.24
Acetone	6000	1.6	J	1.5	ND		1.5	ND		1.5	17		1.5	ND		1.5
Carbon disulfide	700	ND		0.3	ND		0.3	ND		0.3	ND		0.3	ND		0.3
2-Butanone	300	ND		1.9	ND		1.9	ND		1.9	ND		1.9	ND		1.9
4-Methyl-2-pentanone		ND		0.42	ND		0.42	ND		0.42	ND		0.42	ND		0.42
2-Hexanone	40	ND		0.52	ND		0.52	ND		0.52	ND		0.52	ND		0.52
Bromochloromethane		ND		0.15	ND		0.15	ND		0.15	ND		0.15	ND		0.15
Isopropylbenzene	700	ND		0.19	ND		0.19	ND		0.19	0.82		0.19	ND		0.19
1,2,3-Trichlorobenzene		ND		0.23	ND		0.23	ND		0.23	ND		0.23	ND		0.23
1,2,4-Trichlorobenzene	9	ND		0.22	ND		0.22	ND		0.22	ND		0.22	ND		0.22
Methyl Acetate	7000	ND		0.23	ND		0.23	ND		0.23	ND		0.23	ND		0.23
Cyclohexane		ND		0.27	ND		0.27	ND		0.27	0.52	J	0.27	ND		0.27
Tert-Butyl Alcohol	100	ND		1.4	ND		1.4	ND		1.4	4	J	1.4	ND		1.4
Methyl cyclohexane		ND		0.4	ND		0.4	ND		0.4	2.7	J	0.4	ND		0.4
Freon-113	20000	ND		0.15	ND		0.15	ND		0.15	ND		0.15	ND		0.15
VOLATILE ORGANICS BY GC/MS-TIC																
Total TIC Compounds		-		-	-		-	-		-	60.5	J	0	-		-
SEMIVOLATILE ORGANICS BY GC/MS																
Acenaphthene	400	ND		0.44	ND		0.44	ND		0.44	ND		0.44	ND		0.44
3-Methylphenol/4-Methylphenol	50	ND		0.48	ND		0.48	ND		0.48	ND		0.48	ND		0.48
Bis(2-chloroethyl)ether	7	ND		0.5	ND		0.5	ND		0.5	ND		0.5	ND		0.5
2-Chloronaphthalene	600	ND		0.44	ND		0.44	ND		0.44	ND		0.44	ND		0.44
2,4-Dinitrotoluene	10	ND		1.2	ND		1.2	ND		1.2	ND		1.2	ND		1.2
2,6-Dinitrotoluene	10	ND		0.93	ND		0.93	ND		0.93	ND		0.93	ND		0.93
Fluoranthene	300	ND		0.26	ND		0.26	ND		0.26	ND		0.26	ND		0.26
4-Chlorophenyl phenyl ether		ND		0.49	ND		0.49	ND		0.49	ND		0.49	ND		0.49
Bis(2-chloroisopropyl)ether	300	ND		0.53	ND		0.53	ND		0.53	ND		0.53	ND		0.53
Bis(2-chloroethoxy)methane		ND		0.5	ND		0.5	ND		0.5	ND		0.5	ND		0.5
Hexachlorocyclopentadiene	40	ND		0.69	ND		0.69	ND		0.69	ND		0.69	ND		0.69
Hexachloroethane	7	ND		0.58	ND		0.58	ND		0.58	ND		0.58	ND		0.58
Isophorone	40	ND		1.2	ND		1.2	ND		1.2	ND		1.2	ND		1.2
Naphthalene	300	ND		0.46	ND		0.46	ND		0.46	ND		0.46	ND		0.46
Nitrobenzene	6	ND		0.77	ND		0.77	ND		0.77	ND		0.77	ND		0.77
NDPA/DPA	10	ND		0.42	ND		0.42	ND		0.42	ND		0.42	ND		0.42
n-Nitrosodi-n-propylamine		ND		0.64	ND		0.64	ND		0.64	ND		0.64	ND		0.64
Bis(2-ethylhexyl)phthalate	3	ND		1.5	ND		1.5	ND		1.5	ND		1.5	ND		1.5
Butyl benzyl phthalate	100	ND		1.2	ND		1.2	ND		1.2	ND		1.2	ND		1.2
Di-n-butylphthalate	700	ND		0.39	ND		0.39	ND		0.39	ND		0.39	ND		0.39
Di-n-octylphthalate	100	ND		1.3	ND		1.3	ND		1.3	ND		1.3	ND		1.3
Diethyl phthalate	6000	ND		0.38	ND		0.38	ND		0.38	ND		0.38	ND		0.38
Dimethyl phthalate		ND		1.8	ND		1.8	ND		1.8	ND		1.8	ND		1.8
Chrysene	5	ND		0.34	ND		0.34	ND		0.34	ND		0.34	ND		0.34
Acenaphthylene		ND		0.46	ND		0.46	ND		0.46	ND		0.46	ND		0.46
Anthracene	2000	ND		0.33	ND		0.33	ND		0.33	ND		0.33	ND		0.33
Benzo(ghi)perylene		ND		0.3	ND		0.3	ND		0.3	ND		0.3	ND		0.3
Fluorene	300	ND		0.41	ND		0.41	ND		0.41	ND		0.41	ND		0.41
Phenanthrene		ND		0.33	ND		0.33	ND		0.33	ND		0.33	ND		0.33
Pyrene	200	ND		0.28	ND		0.28	ND		0.28	ND		0.28	ND		0.28
4-Chloroaniline	30	ND		1.1	ND		1.1	ND		1.1	ND		1.1	ND		1.1
2-Nitroaniline		ND		0.5	ND		0.5	ND		0.5	ND		0.5	ND		0.5
3-Nitroaniline		ND		0.81	ND		0.81	ND		0.81	ND		0.81	ND		0.81
4-Nitroaniline		ND		0.8	ND		0.8	ND		0.8	ND		0.8	ND		0.8
Dibenzofuran		ND		0.5	ND		0.5	ND		0.5	ND		0.5	ND		0.5
2-Methylnaphthalene	30	ND		0.45	ND		0.45	ND		0.45	ND		0.45	ND		0.45
2,4,6-Trichlorophenol	20	ND		0.61	ND		0.61	ND		0.61	ND		0.61	ND		0.61
p-Chloro-m-cresol		ND		0.35	ND		0.35	ND		0.35	ND		0.35	ND		0.35
2-Chlorophenol	40	ND		0.48	ND		0.48	ND		0.48	ND		0.48	ND		0.48
2,4-Dichlorophenol	20	ND		0.41	ND		0.41	ND		0.41	ND		0.41	ND		0.41
2,4-Dimethylphenol	100	ND		1.8	ND		1.8	ND		1.8	ND		1.8	ND		1.8
2-Nitrophenol		ND		0.85	ND		0.85	ND		0.85	ND		0.85	ND		0.85
4-Nitrophenol		ND		0.67	ND		0.67	ND		0.67	ND		0.67	ND		0.67
2,4-Dinitrophenol	40	ND		6.6	ND		6.6	ND		6.6	ND		6.6	ND		6.6
Phenol	2000	ND		0.57	ND		0.57	ND		0.57	ND		0.57	ND		0.57
2-Methylphenol	50	ND		0.49	ND		0.49	ND		0.49	ND		0.49	ND		0.49
2,4,5-Trichlorophenol	700	ND		0.77	ND		0.77	ND		0.77	ND		0.77	ND		0.77
Carbazole		ND		0.49	ND		0.49	ND		0.49	ND		0.49	ND		0.49
4-Bromophenyl phenyl ether		ND		0.38	ND		0.38	ND		0.38	ND		0.38	ND		0.38

Hess Corporation Former Port Reading Complex
750 Cliff Road, Port Reading NJ
AOC 19 - QC Laboratory
Groundwater Analytical Results
November 2021

Client Sample ID:	NJ Groundwater Criteria (NJAC 7:9C 9/4/18)	MW-1		MW-2		MW-3		MW-4		PER-6R	
Lab Sample ID:		L2165570-01		L2165570-02		L2165570-03		L2165570-04		L2165570-05	
Date Sampled:		11/30/2021		11/30/2021		11/30/2021		11/30/2021		11/30/2021	
Matrix:		WATER		WATER		WATER		WATER		WATER	
3,3'-Dichlorobenzidine	30	ND	1.6	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Benzaldehyde		ND	0.53	ND	0.53	ND	0.53	ND	0.53	ND	0.53
Acetophenone	700	ND	0.53	ND	0.53	ND	0.53	ND	0.53	ND	0.53
Caprolactam	4000	ND	3.3	ND	3.3	ND	3.3	ND	3.3	ND	3.3
Biphenyl	400	ND	0.46	ND	0.46	ND	0.46	ND	0.46	ND	0.46
1,2,4,5-Tetrachlorobenzene		ND	0.44	ND	0.44	ND	0.44	ND	0.44	ND	0.44
Atrazine	3	ND	0.76	ND	0.76	ND	0.76	ND	0.76	ND	0.76
2,3,4,6-Tetrachlorophenol	200	ND	0.84	ND	0.84	ND	0.84	ND	0.84	ND	0.84
SEMIVOLATILE ORGANICS BY GC/MS-SIM											
4,6-Dinitro-o-cresol		ND	0.09	ND	0.09	ND	0.09	ND	0.09	ND	0.09
Benzo(a)anthracene	0.1	0.02 J	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Benzo(a)pyrene	0.1	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Benzo(b)fluoranthene	0.2	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(k)fluoranthene	0.5	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Dibenzo(a,h)anthracene	0.3	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Indeno(1,2,3-cd)pyrene	0.2	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Hexachlorobenzene	0.02	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Pentachlorophenol	0.3	0.16 J	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Hexachlorobutadiene	1	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
1,4-Dioxane	0.4	0.0532 J	0.0326	0.0561 J	0.0314	ND	0.0314	0.127 J	0.0326	ND	0.0326
SEMIVOLATILE ORGANICS BY GC/MS-TIC											
Total TIC Compounds		5.96 J	0	-	-	-	-	3.23 J	0	1.53 J	0
TOTAL METALS											
Aluminum, Total	200	**776**	**3.27**	13.9	3.27	11.5	3.27	**2410**	**3.27**	**1440**	**3.27**
Antimony, Total	6	2.136 J	0.429	ND	0.429	ND	0.429	0.9265 J	0.429	1.204 J	0.429
Arsenic, Total	3	2.764	0.165	**6.375**	**0.165**	2.415	0.165	2.899	0.165	**3.288**	**0.165**
Barium, Total	6000	30.03	0.173	47.58	0.173	36.05	0.173	23.63	0.173	41.5	0.173
Beryllium, Total	1	ND	0.107	ND	0.107	ND	0.107	ND	0.107	ND	0.107
Cadmium, Total	4	ND	0.0599	ND	0.0599	0.0747 J	0.0599	ND	0.0599	0.1949 J	0.0599
Calcium, Total		45600	39.4	12300	39.4	11700	39.4	58000	39.4	32300	39.4
Chromium, Total	70	4.625	0.178	0.5181 J	0.178	0.1917 J	0.178	11.92	0.178	3.518	0.178
Cobalt, Total	100	0.7193	0.163	0.8322	0.163	0.7334	0.163	0.3538 J	0.163	1.171	0.163
Copper, Total	1300	8.604	0.384	8.354	0.384	5.354	0.384	1.461	0.384	23.37	0.384
Iron, Total	300	24.2 J	19.1	**1390**	**19.1**	**2940**	**19.1**	256	19.1	**2420**	**19.1**
Lead, Total	5	ND	0.343	ND	0.343	ND	0.343	0.3951 J	0.343	**6.238**	**0.343**
Magnesium, Total		ND	24.2	1670	24.2	4490	24.2	103	24.2	4910	24.2
Manganese, Total	50	1.912	0.44	**472.7**	**0.44**	**1647**	**0.44**	7.266	0.44	**216**	**0.44**
Mercury, Total	2	ND	0.0915	ND	0.0915	ND	0.0915	0.169 J	0.0915	ND	0.0915
Nickel, Total	100	ND	0.556	0.9785 J	0.556	0.8506 J	0.556	9.219	0.556	2.656	0.556
Potassium, Total		16000	30.9	4600	30.9	1550	30.9	27400	30.9	5270	30.9
Selenium, Total	40	1.99 J	1.73	ND	1.73	ND	1.73	ND	1.73	ND	1.73
Silver, Total	40	ND	0.163	ND	0.163	ND	0.163	ND	0.163	ND	0.163
Sodium, Total	50000	18600	29.3	**59100**	**29.3**	23600	29.3	36500	29.3	6100	29.3
Thallium, Total	2	ND	0.143	ND	0.143	ND	0.143	ND	0.143	ND	0.143
Vanadium, Total		9.921	1.57	ND	1.57	ND	1.57	4.459 J	1.57	6.776	1.57
Zinc, Total	2000	ND	3.41	48.16	3.41	38	3.41	ND	3.41	27.04	3.41
GENERAL CHEMISTRY											
Nitrogen, Ammonia	3000	26.8 J	24	556	24	894	24	**3760**	**24**	540	120